# Caloundra Road, Kawana Way Link Road and Bells Creek Arterial Road Intersection Upgrade

Application Number: **03284** Commencement Date: **19/12/2025** Status: **Locked**

# 1. About the project

## 1.1 Project details

**1.1.1 Project title ***

Caloundra Road, Kawana Way Link Road and Bells Creek Arterial Road Intersection Upgrade

**1.1.2 Project industry type ***

Transport - Land

**1.1.3 Project industry sub-type**

Road

**1.1.4 Estimated start date ***

01/01/2028

**1.1.4 Estimated end date ***

31/12/2031

# 1.2 Proposed Action details

**1.2.1 Provide an overview of the proposed action, including all proposed activities. ***

**Proposed Action Overview**

The Queensland Department of Transport and Main Roads (TMR) is undertaking an upgrade to the intersection of the Caloundra Road, Kawana Way Link Road, and Bells Creek Arterial Road (CKB) intersection on the Sunshine Coast, Queensland (the Proposed Action).

Growth on the Sunshine Coast is increasing rapidly, with the southern end of the Sunshine Coast expected to accommodate a significant portion of this rising population (DTMR, 2023). The CKB intersection is currently one of the busiest intersections on the Sunshine Coast. The increasing congestion and delays occurring at this location impact on the major transport functions of Caloundra Road, Kawana Way Link Road and Bells Creek Arterial Road. The delays also impact the safety of the roundabout, leading to driver impatience and the acceptance of smaller gaps in traffic. Therefore, the Proposed Action will contribute to improvements to traffic efficiencies, while addressing community access and amenity issues, including improving bicycle and pedestrian access.

In March 2021, TMR completed a Preliminary Evaluation (PE) at the CKB intersection which identified a two-stage solution to the congestion; an interim traffic signal upgrade (Stage 1) and grade-separate flyover (overpass) solution (Stage 2). However, following consultation in 2021, majority of respondents provided their preference for the Stage 2 (longer term) solution to be prioritised ahead of the Stage 1 works. As such, TMR are proceeding with only Stage 2 (longer-term), which is comprised of the following works:

- Grade separated close diamond interchange
- Flyover separating north – south traffic from the east – west Caloundra Road traffic that remains at grade
- Grade separated pedestrian and cyclist facilities.

Detailed design of the Project has not yet commenced, with this referral being completed using the concept design from the Business Case with a 10 m buffer, to provide an ‘upper limit’ of impact.

**Project Action Justification**

TMR has a long-term vision for the Sunshine Coast’s strategic transport network in response to regional economic and employment growth, and the need to better connect Regional Economic Clusters. This vision aligns with the South East Queensland (SEQ) Regional Transport Plan and the Strategic Assessment of Service Requirements (SASR). A major component of this response is a continuous north-south motorway servicing the entire eastern Sunshine Coast from Noosa in the north to the Bruce Highway at the Roys Road interchange at Caloundra in the south.

The continuous motorway will serve an intra-regional function within the transport network. It will lead to improved long-term strategic functionality of the Sunshine Coast transport network and connect people with important destinations such as the Sunshine Coast University Hospital (SCUH), Kawana Town Centre, the developing Maroochydore City Central Business District (CBD), Caloundra South Priority Development Area (PDA), the University of the Sunshine Coast, and the Sunshine Coast International Airport.

Kawana Way Link Road, Bells Creek Arterial Road and Caloundra Road are subject to ongoing high traffic growth. Existing infrastructure in the Project extent needs improvement to cater for current and forecast traffic capacity issues, as well as safety issues and future traffic demand.

The SASR described the desired outcome for the CKB Project, which includes:

- an efficient and reliable transport system for all users, including pedestrians, cyclists, public transport users
- drivers of passenger cars and freight vehicles
- improved operational functionality at the intersection by reducing excessive congestion and travel times delays
- reduced frequency and severity of crashes
- minimised impacts on environment

- support for regional development and economic growth through the accommodation of current and future traffic demands.

**Proposed Action Activities**

The Proposed Action involves upgrades to the CKB intersection. Activities in undertaking the Proposed Action will include:

- Construction activities for the road upgrade:
    - Vegetation clearing and grubbing
    - Topsoil stripping
    - Excavation
    - Ground surface and foundation treatments
    - Embankment construction
    - Transportation and hauling of construction materials on and off-site.
    - Bridge construction
    - Retaining wall construction
    - Drainage construction – culverts, channels and associated structures
    - Construction of road pavements, surfaces and finishing elements, including road furniture, signs and line marking.
    - Construction of active transport routes
    - Landscaping and restoration of areas used during construction.
- Construction of ancillary activities:
    - Establishment of safety and environmental controls
    - Access tracks
    - Site compounds
    - Hardstand, laydown & stockpile areas.

Due to the current stage of the design (concept design), exact locations of these ancillary activities have not yet been identified. These activities will be located within existing cleared land within or immediately adjacent to the Project Footprint, where possible. Environmental assessment of the impacts of these activities will occur as part of Detailed Design.

**Additional works**

The following do not form part of the proposed action, the subject of this referral under the EPBC Act.

*1. Surveys and investigations necessary to inform environmental assessment and project design*

These include but are not limited to geotechnical surveys, installation of groundwater monitoring bores, water quality monitoring, contaminated land and acid sulfate soils investigations, ecological surveys, noise monitoring and pot-holing surveys for public utilities. These will be sited to avoid direct and indirect impacts to MNES, and documented via EPBC Act self-assessment prior to commencing.

*2. Service relocation to facilitate main construction works*

Relocation of public utility plant and existing services (sewer, water, telecommunications and electricity public utility infrastructure). Where sited to avoid direct and indirect impacts to MNES, and documented via EPBC Act self-assessment prior to commencing.

*3. Independent activities occurring proximate to the proposed action*

The following works are independent of the proposed action and are generally beneficial to the operation of the transport network regardless of whether the proposed action proceeds. These works are identified in this referral for clarity, as some of these works will occur proximate to the proposed action, however, these are not part of the proposed action:

- business as usual maintenance or works on existing State Road corridors including:

- Vegetation control (e.g., mowing, herbicide treatments, weed removals and grass slashing)
- Line marking, pavement repairs and road resurfacing
- Maintenance of drainage structures and stormwater quality devices, including removal of sediment and debris
- Repair and replacement of road furniture including guardrails, signs, barriers, fencing, guide markers, lighting
- and Intelligent Transportation Systems equipment
- Graffiti removal
- Structure maintenance including bridges, retaining walls and fauna connectivity structure/s
- Collection of gross pollutants from the road corridor and shared user path.

**Direct and indirect impacts**

The Project Footprint is the area where proposed permanent and temporary works are located. A 10 m buffer has been applied to the concept design to provide an upper limit of impacts. It is assumed that full loss will occur within the Project Footprint, which will be refined during detailed design.

The Project Footprint totals 38.8 ha and contains 4.7 ha of field-verified remnant vegetation, 0.8 ha of high-value regrowth vegetation, and 3.3 ha of Coastal Swamp Sclerophyll Forest Threatened Ecological Community (Endangered under the EPBC Act). Additionally, a large portion of the Project Footprint is located within already disturbed areas and road verges, comprising non-remnant vegetation communities and habitat (approximately 17.5 ha). The remaining area within the Project Footprint is cleared for existing infrastructure (15.8 ha).

The difference between the total area of the Project Footprint in **Att A_Terrestrial Ecological Assessment MNES** (38.8 ha) and the value generated in section 2.1 (38.92) is due to a spatial system projection issue.

This referral addresses the potential for direct and indirect impacts to Matters of National Environmental Significance (MNES) resulting from TMR undertaking the Proposed Action. Activities associated with the Proposed Action resulting in direct impacts include vegetation clearing, earthworks and vehicle/machinery interactions. Indirect impacts from the Proposed Action include habitat fragmentation and edge effects, soil erosion and sedimentation of waterways, dust inhibiting plant pollination, spread of invasive species and pests, and increased noise activity.

### 1.2.2 Is the project action part of a staged development or related to other actions or proposals in the region?

No

### 1.2.6 What Commonwealth or state legislation, planning frameworks or policy documents are relevant to the proposed action, and how are they relevant? *

**Commonwealth legislation**

*Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) – MNES are protected under the EPBC Act. The Proposed Action has been referred under this Act as a precautionary measure given the presence of MNES.

*EPBC Act Environmental Offsets Policy* - outlines the Commonwealth Government's approach to the use of environmental offsets under the EPBC Act. It provides details on the use of environmental offsets under the EPBC Act including when offsets are required, how offsets can be delivered, and the framework under which they operate.

*Native Title Act 1993* – recognises and protects Indigenous (Aboriginal and Torres Strait Islander) connection to land and waters, established after the landmark *Mabo* decision to provide a framework for acknowledging pre-existing rights, establishing a system for claims, balancing interests with non-Indigenous systems, and creating bodies like the National Native Title Tribunal to manage disputes and agreements.

**Queensland legislation**

State legislation relevant to the Proposed Action includes:

*Aboriginal Cultural Heritage Act 2003* (ACH Act) – Under the ACH Act, TMR is required to exercise a duty of care to take all reasonable and practical measures to avoid harming Aboriginal and Torres Strait Islander cultural heritage.

*Acquisition of Land Act 1967* acquisition of land using TMR's power under the Transport Planning and Coordination Act 1994 will need to occur in accordance with the Acquisition of Land Act 1967.

*Biosecurity Act 2014* (Biosecurity Act) – The Proposed Action will be required to meet the

General Biosecurity Obligations under the Biosecurity Act, managed through the general requirements for biosecurity matters. This will be managed under the Environmental Management Plan (EMP) (Project EMP).

*Environmental Protection Act 1994* (EP Act) and Environmental Protection Regulation 2019 (EP Regulation) – TMR will comply with the general environmental duty in the EP Act, particularly when undertaking activities with the potential to cause environmental harm.

*Fisheries Act 1994* (Fisheries Act) – Potential fisheries habitat (e.g., waterways) protected under the Fisheries Act are present within the area. TMR will seek to minimise impacts to waterways and carry out works in accordance with the Accepted Development Requirements for operational work that is constructing or raising waterway barrier works. Where not possible appropriate development permits will be sought.

*Nature Conservation Act 1992* (NC Act) – The NC Act provides for the creation and management of protected areas, the protection of native wildlife and regulates the clearing of native plants. The Proposed Action will require high-risk Species Management Programs to protect and manage animal breeding places.

*Planning Act 2016* and *Planning Regulation 2017* – Development approvals triggered by the Fisheries Act 1994, are managed under the Planning Act 2016 and Planning Regulation 2017.

*Nature Conservation (koala) Conservation Plan 2017* – Vegetation clearing in the Project Footprint is also required to be undertaken using sequential clearing practices in accordance with the Qld Nature Conservation (Koala) Conservation Plan 2017.

*Queensland Heritage Act 1992* (QH Act) – The QH Act provides for the conservation of Queensland's cultural heritage for the benefit of the community and future generations. Should the Proposed Action unearth an archaeological artefact that is an important source of information about an aspect of Queensland history, it must be reported to the Department of the Environment, Tourism, Science and Innovation (DETSI).

*Transport Infrastructure Act 1994* (TI Act) – The TI Act provides a regime that allows for and encourages effective integrated planning and efficient management of a system of transport infrastructure.

*Vegetation Management Act 1999* (VM Act) – The VM Act regulates and manages the process and impacts of native vegetation clearing. The Proposed Action will require the removal of regulated vegetation under the VM Act, however as the works are State Government Supported Transport Infrastructure, the proposed action is exempt from requiring a development approval for clearing of regulated vegetation for the construction or maintenance of infrastructure as provided under Schedule 21 of the Planning Regulation 2017.

*Waste Reduction and Recycling Act 2011* – The Proposed Action will be subject to payment of a waste disposal levy under this Act for the disposal of general and regulated waste.

**1.2.7 Describe any public consultation that has been, is being or will be undertaken regarding the project area, including with Indigenous stakeholders. Attach any completed consultation documentations, if relevant. ***

**Community Engagement Strategy:**

TMR recognises an important part of planning is engagement with stakeholders and the community.

The communication and engagement approach adopted for the Project was the 'consult' level in the IAP2 Spectrum of Public Participation. This involves obtaining public feedback on analysis, alternatives and/or decisions, with a commitment to the community of keeping them informed, listening to, and acknowledging concerns and aspirations, and providing feedback on how public input influenced the decision. The main objectives of this engagement approach included:

- raise awareness and provide information of the Project
- gain community and stakeholder feedback to help inform planning and the preferred option for the intersection
- strengthen reputation of TMR.

**Stakeholders for the Proposed Action:**

TMR has identified the following key stakeholder groups for the Project:

- Federal, State and Local elected representatives
- Sunshine Coast Council
- Directly affected landholders
- Community groups - Bellvista and Bells Reach Community Association Adjacent landholders
- Traditional Owner Groups – Kabi Kabi People
- Media
- General public - road users and commuters
- Insurance companies - RACQ
- Developers and businesses
- Sporting groups
- Environmental groups
- Schools

**Engagement activities to date:**

Community consultation was undertaken between 1 November 2021 and 26 November 2021. This initial feedback was used to refine the concept designs. Further feedback on the updated concept designs was sought from the community between 31 January 2023 and 16 February 2023.

Engagement activities undertaken for the Proposed Action to date have included:

<u>June 2021:</u>

- set up TMR project webpage
- media announcement about the planning study for the CKB intersection upgrade
- CKB and Kawana Motorway consultation within 5 km of the Project email notifications to nearby businesses, elected representatives, councillors and the stakeholder database
- geotargeted Facebook campaign
- publish the HiVE page (TMR's online engagement tool) which was the primary feedback tool
- conduct two drop-in community information sessions, including distribution of project newsletters

<u>January to February 2023:</u>

- develop a project flyer which was distributed to key community hubs and businesses by TMR geotargeted Facebook campaign
- email notifications to elected representatives, councillors, and the stakeholder database
- maintain and update the online HiVE page and TMR project webpage
- media statement to announce start and end of community consultation
- information session with Stockland Baringa

November 2023:

- Email notifications to 45 key stakeholders and nearby businesses

**Traditional Owner consultation:**

Project engagement to-date with the Kabi Kabi People has included:

- June 2023: TMR hosted an applicant meeting to provide Kabi Kabi people and their third-party provider and technical advisor with initial notification of the Project. A formal notification letter was then sent out outlining the Project and providing maps and a copy of the latest newsletter
- February 2024: TMR called to organise a site inspection/assessment with the Kabi Kabi People's third-party provider and technical advisor. A further overview of project was provided. A site walkthrough was undertaken, with discussions of management recommendations for the Project.

# 1.3.1 Identity: Referring party

**Privacy Notice:**

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By completing and submitting this form, you consent to the collection of all personal information contained in this form. If you are providing the personal information of other individuals in this form, please ensure you have their consent before doing so.

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Alternatively, email us at privacy@dcceew.gov.au.

☑ **Confirm that you have read and understand this Privacy Notice ***

### 1.3.1.1 Is Referring party an organisation or business? *

Yes

Referring party organisation details

| | |
|---|---|
| **ABN/ACN** | 80078004798 |
| **Organisation name** | WSP AUSTRALIA PTY LIMITED |
| **Organisation address** | 2000 NSW |

Referring party details

| | |
|---|---|
| **Name** | Carolyn Creighton |
| **Job title** | Environmental Scientist |
| **Phone** | +61 7 3721 4946 |
| **Email** | carolyn.creighton@wsp.com |
| **Address** | 900 Ann St, Fortitude Valley, QLD, 4006 |

# 1.3.2 Identity: Person proposing to take the action

### 1.3.2.1 Are the Person proposing to take the action details the same as the Referring party details? *

No

### 1.3.2.2 Is Person proposing to take the action an organisation or business? *

Yes

Person proposing to take the action organisation details

| | |
|---|---|
| **ABN/ACN** | 39407690291 |
| **Organisation name** | Department of Transport and Main Roads |
| **Organisation address** | 4000 QLD |

Person proposing to take the action details


| | |
|---|---|
| **Name** | David Wood |
| **Job title** | Senior Environmental Officer |
| **Phone** | 07 4639 0730 |
| **Email** | david.m.wood@tmr.qld.gov.au |
| **Address** | c- PO Box 5505 Maroochydore BC4558 |

### 1.3.2.14 Are you proposing the action as part of a Joint Venture? *

No

### 1.3.2.15 Are you proposing the action as part of a Trust? *

No

### 1.3.2.17 Describe the Person proposing the action's history of responsible environmental management including details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the Person proposing to take the action. *

**Person Proposing the Action**

TMR, as the Project proponent, is highly experienced in the planning, delivery and operation of major transport infrastructure projects. TMR's core role is the planning, building and maintaining of Queensland's road, rail, freight, and maritime infrastructure.

TMR is committed to the principles of sustainable development and environmental stewardship, including the protection of the environment and striving to minimise adverse impacts of operations on the environment and the local community.

TMR has not been subject to any proceedings under a Commonwealth or State law for the protection of the environment or conservation and sustainable use of natural resources and therefore has a satisfactory record of responsible environmental management. TMR is committed to transparent and meaningful engagement with planning and environmental authorities with respect to its projects and activities.

**Previous Referred Actions**

Recent actions previously referred under the EPBC Act by TMR include:

- 2025/10349 Coomera Connector (Future stages) Loganholme to Coomera
- 2025/10331 Construction of the proposed Mackay Port Access Road – Section 3
- 2024/09972 Direct Sunshine Coast Rail Line
- 2024/09896 Gairloch Safety Realignment (Bruce Highway)
- 2024/09886 Bruce Highway (Gympie – Maryborough), Tiaro Bypass, construct four lane bypass
- 2024/09821 Bruce Highway (Gateway Motorway to Dohles Rocks Road) Upgrade
- 2024/09800 Gateway Motorway (Bracken Ridge to Pine River) Upgrade
- 2023/09701 Warrego Highway / Mount Crosby Road Interchange Upgrade
- 2022/09439 Logan and Gold Coast Faster Rail
- 2022/09348 Loganlea Station Relocation and Park 'n' Ride Expansion

### 1.3.2.18 If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

**Environmental Sustainability Policy**

TMR recognises the need for environmental compliance as part of its core business and has an Environmental Sustainability Policy, refer to **Att B_TMR Environmental Sustainability Policy**. This policy requires TMR to undertake environmental management activities to support environmental conservation through corporate strategies, documents, assessments, and continual oversight.

**Environmental Planning Framework**

TMR follows its own Environmental Management System as detailed in its Environmental Processes Manual that is freely available online via TMR's website - www.tmr.qld.gov.au/business-industry/Technicalstandards-publications/Environmental-processes-manual. This manual is based on the Plan-Do-Check-Act Model in AS/NZS ISO 14001:2016 and is scalable and adaptable for all TMR projects. TMR also has its own Technical Standards (MRTS suite) that it follows. These documents are prepared in alignment with State and Commonwealth legislative requirements and are all freely available online via TMR's website - Specifications Index (Department of Transport and Main Roads).

# 1.3.3 Identity: Proposed designated proponent

### 1.3.3.1 Are the Proposed designated proponent details the same as the Person proposing to take the action? *

Yes

Proposed designated proponent organisation details

| | |
|---|---|
| **ABN/ACN** | 39407690291 |
| **Organisation name** | Department of Transport and Main Roads |
| **Organisation address** | 4000 QLD |

Proposed designated proponent details


| | |
|---|---|
| **Name** | David Wood |
| **Job title** | Senior Environmental Officer |
| **Phone** | 07 4639 0730 |
| **Email** | david.m.wood@tmr.qld.gov.au |
| **Address** | c- PO Box 5505 Maroochydore BC4558 |

### 1.3.4 Identity: Summary of allocation

## Confirmed Referring party's identity

The Referring party is the person preparing the information in this referral.

| | |
|---|---|
| ABN/ACN | 80078004798 |
| Organisation name | WSP AUSTRALIA PTY LIMITED |
| Organisation address | 2000 NSW |
| Representative's name | Carolyn Creighton |
| Representative's job title | Environmental Scientist |
| Phone | +61 7 3721 4946 |
| Email | carolyn.creighton@wsp.com |
| Address | 900 Ann St, Fortitude Valley, QLD, 4006 |

## Confirmed Person proposing to take the action's identity

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

| | |
|---|---|
| ABN/ACN | 39407690291 |
| Organisation name | Department of Transport and Main Roads |
| Organisation address | 4000 QLD |
| Representative's name | David Wood |
| Representative's job title | Senior Environmental Officer |
| Phone | 07 4639 0730 |
| Email | david.m.wood@tmr.qld.gov.au |
| Address | c- PO Box 5505 Maroochydore BC4558 |

## Confirmed Proposed designated proponent's identity

The Person proposing to take the action is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

## 1.4 Payment details: Payment exemption and fee waiver

**1.4.1 Do you qualify for an exemption from fees under EPBC Regulation 5.23 (1) (a)? ***

No

**1.4.3 Have you applied for or been granted a waiver for full or partial fees under Regulation 5.21A? ***

No

**1.4.5 Are you going to apply for a waiver of full or partial fees under EPBC Regulation 5.21A?**

No

**1.4.7 Has the department issued you with a credit note? ***

No

**1.4.9 Would you like to add a purchase order number to your invoice? ***

No

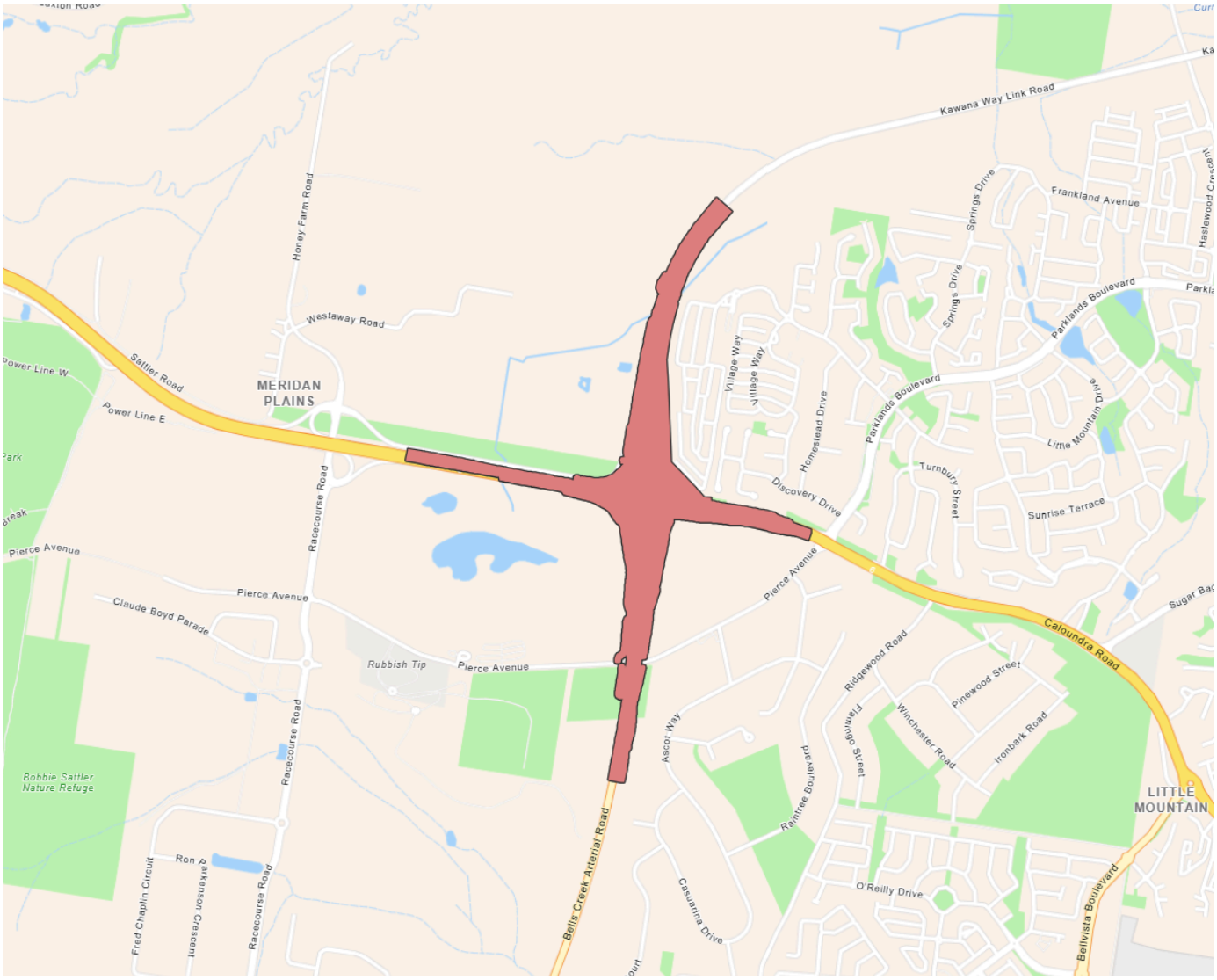
## 1.4 Payment details: Payment allocation

**1.4.11 Who would you like to allocate as the entity responsible for payment? ***

Proposed designated proponent

# 2. Location

# 2.1 Project footprint




**Project Area:** 38.92 Ha **Disturbance Footprint:** 38.92 Ha

## 2.2 Footprint details

### 2.2.1 What is the address of the proposed action? *

Caloundra Road, Kawana Way Link Road, and Bells Creek Arterial Road in Caloundra

### 2.2.2 Where is the primary jurisdiction of the proposed action? *

Queensland

### 2.2.3 Is there a secondary jurisdiction for this proposed action? *

No

### 2.2.5 What is the tenure of the action area relevant to the project area? *

Details of the properties and roads intersected by the Project Footprint are summarized below:

**Freehold:**

- Lot 204 SP189337
- Lot 1000 SP278714.

**Road parcels:**

- Caloundra – Mooloolaba Road
- Westaway Road
- Caloundra Road
- Bells Creek Arterial Road
- Pierce Avenue
- Pierce Avenue, Bells Creek Arterial Road intersection
- Caloundra Road, Parklands Boulevard, Pierce Avenue intersection
- Caloundra Road, Kawana Way Link Road and Bells Creek Arterial Road intersection.

**Reserve**:

- Lot 803 SP149916
- Lot 802 SP149909
- Lot 801 SP149905
- Lot 103 SP272967.

The Project Footprint will be gazetted as road, with the exception of land parcels not required for construction.

# 3. Existing environment

# 3.1 Physical description

### 3.1.1 Describe the current condition of the project area’s environment.

**Location**

The Proposed Action involves upgrades to the intersection of three State-controlled roads: Caloundra Road, Kawana Way Link Road and Bells Creek Arterial Road. The Project Footprint is located within the suburb boundary of Corbould Park in the south-west, Little Mountain in the east and Meridan Plains in the northwest. The CKB intersection forms a key connectivity link between the northern suburbs of Meridan Plains, Currimundi, and Birtinya to the Bruce Highway.

Caloundra Road is a major 4-lane, dual carriageway, arterial road connecting southern areas of the Sunshine Coast Region (Pelican Waters to Warana) to the Bruce Highway. It enables connection to primary industries, tourism and rail transport opportunities in and around the Glasshouse Mountains. This road caters for significant intra-regional and moderate inter-regional traffic movements (for both freight and people).

The Kawana Way Link Road and Bells Creek Arterial Road corridor is planned to be a significant north-south road corridor connecting the Sunshine Motorway in the north to the Bruce Highway in the south, through areas of significant residential and commercial development. These roads are currently a 2-lane, 2-way road and are planned to be duplicated to 4-lane, dual carriageway arterial road.

**Existing Environment**

Project Footprint

The Project Footprint is comprised of relatively flat ground in the north-west rising towards the southeast of the Project Footprint (average 5 m Australian Height Datum (AHD) in the north to 15 m AHD in the south). The western portion of the Project Footprint intercepts the Corbould Park Racecourse.

Adjacent to Project Footprint area

*North*

To the north of the Project Footprint, alluvium is noted to be deeper and underlain by older estuarine and lagoonal deposits comprising clay, mud, and sand to the north and northwest. Land use is largely grazing native vegetation interspersed with marsh/wetland, a reservoir and nature conservation areas. Key features include:

- Large areas of undeveloped land
- Meridan Plains Conservation Park
- Bancrofts Redgum Environment Reserve.

*West*

To the west of the Project Footprint, there are palustrine and riverine wetlands, state-controlled roads (Bruce Highway and Caloundra Road) and scattered areas of residential houses. Key features include:

- Edward Corbould Environment Reserve West
- Caloundra Conservation Park
- Mooloolah River.

*East*

Key features of the urban and natural landscapes to the east of the Project Footprint include:

- Residential land uses, community parks and reserves
- Caloundra Airport.

*South*

In the south and southeast portions of the Project Footprint, the geology, noted as Landsborough Sandstone which is comprised of sandstone, siltstone, shale, conglomerate, and coal, is present. A large area of palustrine wetlands is associated with Pierce Avenue Bushland Reserve. Further south, there is a large area of land in transition, comprised of new housing and industry developments in the suburb of Baringa.

**Zoning**

While majority of the Project Footprint is located within existing road, the Kawana Way Link Road and Bells Creek Arterial Road will be widened to four lanes and will extend into neighbouring properties. Under the Sunshine Coast Planning Scheme 2014, the Project Footprint is located over land within the sport and recreation zone (Corbould Park Racecourse and horse riding clubs), environmental management and conservation zone (vegetated areas, parks and bushland reserves), and rural zone (currently undeveloped land). The northern end of the Project Footprint also intersects an area mapped as 'Precinct RUR (Meridan Plains Extractive Resource Area)'.

**Access**

The Project is within an existing road, so access to the site will be from the existing road network.

**Unexploded Ordnance**

A review of the Department of Defence Unexploded Ordnance (UXO) Mapping indicates that the southern portion of the Project Footprint is subject to a UXO Area (ID: 444) categorised as 'other' and described as Beerwah Artillery Range – proposed for use in 1950's with no known use. The northern portion of the Project Footprint is subject to a UXO Area (ID: 463) categorised as 'other' and described as Caloundra Artillery Range.

**Acid Sulfate Soils**

Coastal areas lower than 5 m Australian Height Datum (AHD) are likely to have acid sulfate soils (ASS) or potential acid sulfate soils (PASS) present. ASS can also be found buried beneath newer soils at elevations below 20 m AHD. A review of Sunshine Coast Council ASS Overlay Map indicates:

- The majority of the Project Area is located within land identified as 'Area 1', being land at or below 5 m AHD including Caloundra Road (west of main roundabout), northern extent of Bells Creek Arterial Road and all of Kawana Link Way Road
- Limited land within the Project Area is identified as being within 'Area 2', being land above 5 m AHD and below 20 m AHD including eastern extent of Caloundra Road and southern extent of Bells Creek Arterial Road.

The Geotechnical Review Report, prepared during Business Case, found through previous ASS laboratory testing that the project alignment is likely to encounter ASS/PASS:

- Kawana Link Way; the screening test results reported a wide range of results, with pHF values of 3.8 to 6.1, pHFOX values of 1.0 to 4.4 therefore some of the samples are likely to be ASS/PASS.
- Caloundra Road (Eastern Section); the screening test results reported pHF values of 4.6 and pHFOX of 4.0, these results indicate that the samples tested are not likely to be ASS/PASS.
- Caloundra Road (Western Section); the screening test results reported pHF values of 5.1 to 6.1, pHFOX values of 4.3 to 6.4 these results indicated that the samples tested are not likely to be ASS/PASS.
- The Geotechnical Field Investigation Report completed further ASS/PASS testing in areas where remove and replace or excavation works will be required for pre-classification and assessment of treatment rates. The laboratory analysis of alluvial soils confirms the presence of ASS. It is therefore a likely risk that ASS exists where alluvial soils are present. It is noted the analysis to date is very limited and further assessment will be required in subsequent stages of project development to inform extent and severity of ASS impacts. Future assessment will need to be targeted and designed

with reference to the site setting, planned ground disturbances and impact to groundwater and be completed by a Suitably Qualified  Person (SQP) as defined by the EP Act.

### 3.1.2 Describe any existing or proposed uses for the project area.

**Existing land uses**

The region surrounding the Project Footprint is characterised by residential areas, parks and environmental reserves, native vegetation, and Corbould Park Racecourse. Existing land uses within and surrounding the Project Footprint includes:

- residential and commercial developments
- community land uses such as kindergartens, churches and aged care facilities native vegetation
- watercourses
- local roads that connect into major roads and highways
- high and low voltage Energex network
- Edward Corbould Environment Reserve West
- Westaway Road Bushland Reserve
- Corbould Park.

**Proposed land uses**

The proposed upgrade to the CKB Intersection is for transport. A significant portion of the Project Footprint is not anticipated to be disturbed during construction as it is already comprised of an existing road. The surrounding landscape is currently undergoing a transition to support the population growth in the area, with large residential and commercial areas being developed. As such, the Proposed Action will not be incompatible with the proposed land uses for the region.

### 3.1.3 Describe any outstanding natural features and/or any other important or unique values that applies to the project area.

**Wildlife Corridors**

The northern and western end of the Project Footprint intercepts a state-mapped regional terrestrial biodiversity corridor that runs east-west connecting two parcels of Mooloolah River National Park and Dularcha National Park (**Att C_ CKB_Road intersection upgrade - Biodiversity Corridor)**.

This biodiversity corridor forms part of the South East Queensland (SEQ) terrestrial corridor which is a network of connected habitats for the purpose of facilitating movement of wildlife and maintaining biodiversity. The corridor is at a landscape scale, and intersects major infrastructure and developed areas including the existing CKB intersection, Bruce Highway and the suburbs of Landsborough and Caloundra. Therefore, the proposed action will not contribute to additional disturbance or fragmentation of this biodiversity corridor.

**Remnant vegetation**

The Project Footprint contains approximately 4.7 ha of field verified remnant vegetation (Category B) and 0.8 ha of field verified High value regrowth vegetation (Category C).

West:

- RE 12.3.5 - *Melaleuca quinquenervia* open forest on coastal alluvium
- HVR 12.3.5 - *Melaleuca quinquenervia* open forest on coastal alluvium.

South:

- RE 12.3.5 - *Melaleuca quinquenervia* open forest on coastal alluvium
- RE 12.9-10.22 - *Schoenus brevifolius*, *Banksia oblongifolia* sedgeland and shrubland on sedimentary rocks
- RE 12.9-10.4 - *Eucalyptus racemosa subsp. racemosa*, *Corymbia intermedia* woodland on sedimentary rocks
- HVR 12.9-10.4 - *Eucalyptus racemosa subsp. racemosa*, *Corymbia intermedia* woodland on sedimentary rocks.

East:

- RE 12.9-10.22 - *Schoenus brevifolius*, *Banksia oblongifolia* sedgeland and shrubland on sedimentary rocks
- RE 12.9-10.4 - *Eucalyptus racemosa subsp. racemosa*, *Corymbia intermedia* woodland on sedimentary rocks.

North:

No regional ecosystems recorded during field surveys.

The remaining Project Footprint is comprised of the following:

- 17.5 ha of non-remnant vegetation communities and habitat
- 15.8 ha of existing road infrastructure.

Detailed descriptions of each vegetation community or regional ecosystem are presented in **Att A_Terrestrial Ecological Assessment MNES, Section 5.1, Pages 18 - 29.** The distribution of field-verified regional ecosystems across the Project Footprint is presented in **Att A_Terrestrial Ecological Assessment MNES, Figure 5.1, Page 20.** None of the field-verified regional ecosystems are present along Kawana Way Link Road.

**Aquatic values**

The Proposed Action is largely located within the Mooloolah River catchment, with a small southern section located within Pumicestone Creek catchment. The Healthy Land and Water Report Card 2023 has rated the condition of the Mooloolah River catchment as being fair (decreased pollutant loads, significant decline is

freshwater health , poor freshwater wetlands, fair condition of riparian habitats and improved estuarine water quality) while the Pumicestone Creek catchment has been rated as very good (reduced pollutant loads, improved estuarine water quality and fair riparian habitats and wetlands) (Healthy Land and Water, 2023).

The Project Footprint contains a single surface water feature in the north which is identified as ‘unmapped’ under the watercourse identification map. It is described as a constructed water feature which functions as a drain. The watercourse originates at Corbould Park Racecourse (Lot 1000 SP278714) and flows north, going underneath Caloundra Road via box culverts and Westaway Road before passing through Westaway Road Bushland Reserve and heading to the northeast, crossing Kawana Way Link Road via a series of box culverts. It continues to the north, draining into a reservoir approximately 1.8 km north of the Project Footprint.

The unnamed watercourse is mapped as a low risk (green) watercourse for waterway barrier works.

Numerous wetland areas are mapped within and in proximity to the Project Footprint. Types of wetlands include natural palustrine in the south and northwest and lacustrine wetlands in the northeast. Mapped areas of Matters of State Environmental Significance high ecological significance wetlands are present within the Project Footprint and are associated with palustrine wetlands at Corbould Park Racecourse (Lot 1000 SP278714) and Corbould Park (Lot 204 SP189337). These palustrine wetlands are ephemeral freshwater ecosystems with near permanent flow through potential alluvial aquifers with groundwater dependency.

The Project Footprint does not contain land mapped as being part of the coastal management district (CMD), erosion prone area or storm tide inundation areas.

### 3.1.4 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

The Project Footprint predominately consists of relatively flat ground in the north-west (approximately 5 m AHD) rising towards the south-east (approximately 15 m AHD).

## 3.2 Flora and fauna

**3.2.1 Describe the flora and fauna within the affected area and attach any investigations of surveys if applicable.**

**Desktop and field assessments**

To inform the assessment of the Proposed Action, comprehensive desktop analysis and field surveys have been undertaken. The desktop assessment included a review of literature, and searches of publicly available datasets and online mapping to broadly characterise and identify the MNES that may occur within the Project Footprint. Field surveys were conducted across the Project Footprint to field verify findings of the desktop assessment and confirm the presence / absence of MNES, and to identify those at risk of potential Project- related impacts. Field surveys, inclusive of targeted flora and fauna surveys. were completed between 22 and 24 June 2022. An updated verification walkover was then undertaken on the 03 September 2025. These surveys were undertaken in accordance with the relevant guidelines; however it is acknowledged that targeted wet season surveys, focussing in particular on amphibians, have been completed to date. Wet season surveys are proposed to be completed in the 2025-26 wet season to meet this requirement.

Further details on the desktop and field assessments can be found in **Att A: Terrestrial Ecological Assessment MNES, Section 4, pages 36 - 67**.

**Flora**

A total of 120 flora species were recorded during the field surveys, including 33 introduced species. Opportunistic threatened flora surveys in 2025 identified within the Project Footprint a single *Allocasuarina emuina* (Mt Emu She-oak) listed as Endangered under the EPBC Act. This identification was confirmed by the Queensland Herbarium (provided in **Att A: Terrestrial Ecological Assessment MNES, Appendix F**). The species was found growing on the south side of Caloundra Road, approximately 120 m east of Bells Creek Arterial Road. The individual was approximately one metre tall with a sprawling habit and was bearing fruit at the time of the survey.

The Project Footprint is comprised of remnant and high value regrowth ecosystems (Eucalypt woodland, Melaleuca woodland and closed sedgeland) alongside previously cleared non-remnant communities. Remnant ecosystems were relatively undisturbed outside of limited edge effects due to clearing for road and drainage infrastructure.

Non-remnant ecosystems in the Project Footprint have been impacted by previous clearing associated with road works, power line easements, fire breaks, footpaths, and the Corbould Park Racecourse. These systems are highly variable, including revegetated road verge shrubland, highly modified exotic grassland, and canopy-variable exotic and native-dominated woodland. High disturbance, particularly due to edge effects and proximity to residential land, has led to high coverage of exotic plant species in both the shrub and ground layer. The exotic plantation pine, *Pinus elliottii*, has also established in woodlands along road verges, supporting a tree layer composed of native species including *Acacia concurrens* and *Alphitonia excelsa*. Other non-remnant woodland is composed of *Melaleuca quinquenervia* regrowth along previously cleared road verges.

Five restricted invasive plants listed under the Biosecurity Act 2014 were recorded during surveys, including two species that are also listed as Weeds of National Significance (WoNS).

**Fauna**

A total of 62 fauna species were recorded during surveys, including three reptiles, two amphibians, 55 birds and two mammals.

No threatened fauna species listed under the EPBC Act were recorded within Project Footprint during field surveys. However, the Wallum Sedge Frog is known to occur within the Project Footprint through surveys completed for overlapping developments.

The desktop assessment identified an additional seven threatened and/or migratory fauna species listed under the EPBC Act that were assessed as having a moderate likelihood of occurrence within the Project Footprint, as detailed below:

Moderate likelihood of occurrence:

- *Apus pacificus* (Fork-tailed Swift) – migratory
- *Calyptorhynchus lathami lathami* (South-eastern Glossy Black Cockatoo) – vulnerable
- *Hirundapus caudacutus* (White-throated Needletail) – vulnerable, migratory
- *Pandion haliaetus* (Osprey) – migratory
- *Phascolarctos cinereus* (Koala (combined Qld, NSW, ACT)) – endangered
- *Pteropus policephalus* (Grey-headed Flying-fox) – vulnerable.

Three invasive pest animal species were recorded during surveys, including Cane Toad, Spotted Dove and the Common Myna.

### 3.2.2 Describe the vegetation (including the status of native vegetation and soil) within the project area.

**Vegetation communities**

Field verification surveys confirmed two distinct land zones mapped by the Queensland Herbarium as present within the Project Footprint:

- Land zone 3: Recent Quaternary alluvial systems, including closed depressions, paleo-estuarine deposits currently under freshwater influence, inland lakes and associated wave-built lunettes
- Land zone 9 - 10: Fine-coarse grained sedimentary rocks forming undulating landscapes or plateau, benches, and scarps.

Within these two land zones, there were three remnant regional ecosystems represented across the Project Footprint (RE 12.3.5, RE 12.9-10.22 and RE 12.9-10.4), two of which also occurred as younger high value regrowth ecosystems (HVR 12.3.5 and HVR 12.9 – 10.4). Some areas of mapped 'Of concern RE 12.3.4' according to the Queensland Herbarium mapping were field verified as being 'Least concern RE 12.3.5' due to the lack of *Eucalyptus robusta* canopy.

Approximately 14% of the Project Footprint is comprised of remnant vegetation communities, comprised mostly of open forest dominated by *Melaleuca quinquenervia* on coastal alluvium (RE 12.3.5) and *Eucalyptus racemosa subsp. racemosa*, Corymbia intermedia woodland on sedimentary rocks (RE 12.9-10.4). Smaller areas exist *of Schoenus brevifolius*, *Banksia oblongifolia* sedgeland and shrubland on sedimentary rocks (RE 12.9-10.22). A detailed description of each field verified vegetation community or regional ecosystem is provided in **Att A_Terrestrial Ecological Assessment: MNES, Section 5.1, Pages 21 - 29**.

One TEC corresponded to the field verified regional ecosystems within the Project Footprint, namely RE 12.3.5 and HVR 12.3.5, which are associated with the Coastal Swamp Sclerophyll Forest TEC listed as Endangered under the EPBC Act. This TEC was confirmed as being present within three patches of vegetation in the Project Footprint.

The other four TECs revealed by the PMST are not present within the Project Footprint, as no field verified regional ecosystems corresponding with these TECs, as listed by their Conservation Advice, were recorded within the Project Footprint.

**Soil**

A desktop review identified a diversity of soil types across the Project Footprint, including hydrosol, tenosol and chromosols.

Coastal areas lower than 5 m Australian Height Datum (AHD) are likely to have acid sulfate soils (ASS) or potential acid sulfate soils (PASS) present. ASS can also be found buried beneath newer soils at elevations below 20 m AHD. According to the Geoscience Australia Portal, there is a high probability for the Project Footprint to contain acid sulfate soils as the topography is below 20 mAHD.

A geotechnical investigation was undertaken for the Project in 2022 by WSP Australia Pty Ltd and found the following results:

- Kawana Way Link Road– some samples are likely to be ASS/PASS
- Caloundra Road (eastern section) – samples not likely to be ASS/PASS
- Caloundra Road (western section) – samples not likely to be ASS/PASS

Alluvial soils were also tested and the presence of ASS was confirmed. It is therefore a likely risk that ASS exists where alluvial soils are present.

The Project Footprint extends into one property listed on the Environmental Management Register (EMR)/Contaminated Land Register (CLR), being Lot 103 SP272967.

# 3.3 Heritage

### 3.3.1 Describe any Commonwealth Heritage Places Overseas or other places recognised as having heritage values that apply to the project area.

There are no places listed on the Australian Heritage Database, Queensland Heritage Register or Queensland National Trust Heritage Register identified within the Project Footprint.

### 3.3.2 Describe any Indigenous heritage values that apply to the project area.

**Cultural Heritage**

The Kabi Kabi People Aboriginal Corporation is the relevant cultural heritage party for the Project Footprint. A search of TMR Heritage Datasets has identified five Aboriginal cultural heritage sites within the Project Footprint. These sites have been identified as Aboriginal artefact scatters and are listed on the Aboriginal and Torres Strait Islander Cultural Heritage Database and Register as part of the KC-0272-1 Artefact Scatter polygon. The artefact scatter is located along the eastern side of Caloundra Road. A Cultural Heritage Field Inspection/Assessment was undertaken for the Project in February 2024 by TMR, Kabi Kabi People and the Kabi Kabi People's third-party provider and technical advisor. An additional artefact was uncovered within the Project Footprint, along Caloundra Road corridor.

While the Project Footprint predominantly comprises land whereby construction activities are considered Low- Risk (Category 3), the cultural heritage field assessment also identified areas where actions would be classed as High-Risk (Category 5).

*Category 3:*

Areas that have been subject to significant ground disturbance that do not contain registered cultural heritage site polygons include land within which underground services are present including stormwater pipe drainage, electricity and lighting infrastructure. Disturbance relates to historic site establishment and construction activities including vegetation clearing, grubbing, earthworks (excavation and filling), drainage works, ancillary works, grading, levelling and pavement works incorporating sealing. This includes works within existing paved surfaces associated with Caloundra Road, Kawana Way Link Road and Bells Creek Arterial Road.

*Category 5:*

Disturbance of land adjacent to the existing developed area containing remnant vegetation is identified as being High-Risk Category 5. Areas of remnant vegetation are located along Caloundra Road and Bells Creek Arterial Road.

No other registered cultural heritage site point or polygons, cultural heritage management plans, Designated Landscape Areas or Registered Cultural Heritage Study Areas were identified within the Project Footprint.

**Native Title**

The following Native Title determination is intersected by the Project Footprint:

- Kabi Kabi Nation Traditional Owners Native Title Claim Group - QCD2024/002 is in effect-finalised (registered 25 October 2024)

## 3.4 Hydrology

### 3.4.1 Describe the hydrology characteristics that apply to the project area and attach any hydrological investigations or surveys if applicable. *

**Surface water**

There are no watercourses gazetted under the Water Act 2000 within the Project Footprint.

The Project Footprint is largely located within the Mooloolah River catchment, with a small southern section located within Pumicestone Creek catchment.

The Project Footprint contains a single surface water feature in the north which is identified as ‘unmapped’ under the watercourse identification map. This constructed water feature has a function as a drain and flows towards a reservoir in the north.

**Flooding**

The Sunshine Coast Flood Mapping and Information 2025 has identified low, moderate and high-risk flood area within the Project Footprint, including:

- Western end of Project Footprint – land areas adjacent to Caloundra Road and Westaway Road
- Northern end of Project Footprint – land adjacent to Kawana Way Link Road
- Southern end of Project Footprint – small land areas adjacent to Bells Creek Arterial Road

**Water plans**

Water plans developed under the Water Act set out requirements and frameworks for water availability and water entitlements including the taking and identifying of priorities and mechanisms for future water requirement. The Project Footprint is located mostly within the water plan area regulated by the Water Plan (Mary Basin), with the southern portion of the Project Footprint regulated by the Water Plan (Moreton) (State of Queensland 2025).

**Groundwater**

There are no groundwater bores in proximity to the Project Footprint.

Potential groundwater dependent aquifers are mapped across the majority of the Project Footprint, comprising sedimentary rocks with near-permanent flow (low confidence) and alluvial aquifers with near-permanent flow (moderate confidence).

# 4. Impacts and mitigation

# 4.1 Impact details

**Potential Matters of National Environmental Significance (MNES) relevant to your proposed action area.**

| EPBC Act section | Controlling provision | Impacted | Reviewed |
|---|---|---|---|
| S12 | World Heritage | No | Yes |
| S15B | National Heritage | No | Yes |
| S16 | Ramsar Wetland | No | Yes |
| S18 | Threatened Species and Ecological Communities | Yes | Yes |
| S20 | Migratory Species | No | Yes |
| S21 | Nuclear | No | Yes |
| S23 | Commonwealth Marine Area | No | Yes |
| S24B | Great Barrier Reef | No | Yes |
| S24D | Water resource in relation to large coal mining development or coal seam gas | No | Yes |
| S26 | Commonwealth Land | No | Yes |
| S27B | Commonwealth Heritage Places Overseas | No | Yes |
| S28 | Commonwealth or Commonwealth Agency | No | Yes |

## 4.1.1 World Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

### 4.1.1.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

### 4.1.1.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action is not located directly within or in proximity to a World Heritage site.

## 4.1.2 National Heritage

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

—

### 4.1.2.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

### 4.1.2.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action is not located directly within or in proximity to a National Heritage site.

## 4.1.3 Ramsar Wetland

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

| Direct impact | Indirect impact | Ramsar wetland |
|---|---|---|
| No | No | Moreton Bay |

### 4.1.3.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

### 4.1.3.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Moreton Bay Ramsar wetland is located in proximity to the Project. However, it is outside the Project Footprint, being approximately 4.6 km southeast of the Project Footprint (at its closest point). Therefore, the Project will avoid direct impacts to the Moreton Bay Ramsar wetland.

Indirect impacts associated with run off, spills, acid sulfate soils exposure and sedimentation of downstream waterways will not occur as the only watercourse intersected by the Project is a constructed watercourse which functions as a drain and flows into a reservoir to the north of the Project. There are no nearby watercourses that flow southeast towards the Ramsar Wetland.

## 4.1.4 Threatened Species and Ecological Communities

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

### Threatened species

| Direct impact | Indirect impact | Species | Common name |
|---|---|---|---|
| Yes | Yes | Acacia attenuata | |
| No | No | Acronychia littoralis | Scented Acronychia |
| Yes | Yes | Allocasuarina emuina | Emu Mountain Sheoak, Mt Emu She-oak |
| No | No | Allocasuarina thalassoscopica | |
| No | No | Anthochaera phrygia | Regent Honeyeater |
| No | No | Argynnis hyperbius inconstans | Australian Fritillary |
| No | No | Arthraxon hispidus | Hairy-joint Grass |
| No | No | Bosistoa transversa | Three-leaved Bosistoa, Yellow Satinheart |
| No | No | Botaurus poiciloptilus | Australasian Bittern |
| No | No | Calidris acuminata | Sharp-tailed Sandpiper |
| No | No | Calidris canutus | Red Knot, Knot |
| No | No | Calidris ferruginea | Curlew Sandpiper |
| Yes | Yes | Calyptorhynchus lathami lathami | South-eastern Glossy Black-Cockatoo |
| No | No | Chalinolobus dwyeri | Large-eared Pied Bat, Large Pied Bat |
| No | No | Charadrius leschenaultii | Greater Sand Plover, Large Sand Plover |
| No | No | Cherax robustus | Sand Yabby |
| No | No | Climacteris picumnus victoriae | Brown Treecreeper (south-eastern) |
| No | No | Coeranoscincus reticulatus | Three-toed Snake-tooth Skink |
| No | No | Coleus omissus | |
| No | No | Cryptocarya foetida | Stinking Cryptocarya, Stinking Laurel |
| No | No | Cryptostylis hunteriana | Leafless Tongue-orchid |
| No | No | Cyclopsitta diophthalma coxeni | Coxen's Fig-Parrot |

| Direct impact | Indirect impact | Species | Common name |
|---|---|---|---|
| No | No | Dasyurus hallucatus | Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] |
| No | No | Dasyurus maculatus maculatus (SE mainland population) | Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) |
| No | No | Delma torquata | Adorned Delma, Collared Delma |
| No | No | Erythrotriorchis radiatus | Red Goshawk |
| No | No | Eucalyptus conglomerata | Swamp Stringybark |
| No | No | Falco hypoleucos | Grey Falcon |
| No | No | Gallinago hardwickii | Latham's Snipe, Japanese Snipe |
| No | No | Hemiaspis damelii | Grey Snake |
| No | No | Hirundapus caudacutus | White-throated Needletail |
| No | No | Lathamus discolor | Swift Parrot |
| No | No | Limnodromus semipalmatus | Asian Dowitcher |
| Yes | Yes | Litoria olongburensis | Wallum Sedge Frog |
| No | No | Macadamia integrifolia | Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak |
| No | No | Macadamia ternifolia | Small-fruited Queensland Nut, Gympie Nut |
| No | No | Macadamia tetraphylla | Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut |
| No | No | Mixophyes fleayi | Fleay's Frog |
| No | No | Mixophyes iteratus | Giant Barred Frog, Southern Barred Frog |
| No | No | Mordacia praecox | Non-parasitic Lamprey, Precocious Lamprey |
| No | No | Nannoperca oxleyana | Oxleyan Pygmy Perch |
| No | No | Numenius madagascariensis | Eastern Curlew, Far Eastern Curlew |
| No | No | Petauroides volans | Greater Glider (southern and central) |
| No | No | Petaurus australis australis | Yellow-bellied Glider (south-eastern) |

| Direct impact | Indirect impact | Species | Common name |
|---|---|---|---|
| Yes | Yes | Phaius australis | Lesser Swamp-orchid |
| Yes | Yes | Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) | Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) |
| No | No | Planchonella eerwah | Shiny-leaved Condoo, Black Plum, Wild Apple |
| No | No | Potorous tridactylus tridactylus | Long-nosed Potoroo (northern) |
| Yes | Yes | Prasophyllum wallum | Wallum Leek-orchid |
| No | No | Pseudomugil mellis | Honey Blue Eye, Honey Blue-eye |
| Yes | Yes | Pteropus poliocephalus | Grey-headed Flying-fox |
| No | No | Rhodamnia rubescens | Scrub Turpentine, Brown Malletwood |
| No | No | Rhodomyrtus psidioides | Native Guava |
| No | No | Romnalda strobilacea | |
| No | No | Rostratula australis | Australian Painted Snipe |
| No | No | Samadera bidwillii | Quassia |
| No | No | Sophora fraseri | |
| No | No | Stagonopleura guttata | Diamond Firetail |
| No | No | Sternula nereis nereis | Australian Fairy Tern |
| No | No | Syzygium hodgkinsoniae | Smooth-bark Rose Apple, Red Lilly Pilly |
| No | No | Thesium australe | Austral Toadflax, Toadflax |
| No | No | Tringa nebularia | Common Greenshank, Greenshank |
| No | No | Triunia robusta | Glossy Spice Bush |
| No | No | Turnix melanogaster | Black-breasted Button-quail |
| No | No | Xeromys myoides | Water Mouse, False Water Rat, Yirrkoo |
| Yes | Yes | Zieria exsul | Banished Stink Bush |

## Ecological communities

| Direct impact | Indirect impact | Ecological community |
|---|---|---|
| No | No | Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community |
| Yes | Yes | Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland |
| No | No | Lowland Rainforest of Subtropical Australia |
| No | No | Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions |

**4.1.4.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? ***

Yes

**4.1.4.2 Briefly describe why your action has a direct and/or indirect impact on these protected matters. ***

The Proposed Action involves activities that have the potential to directly and/or indirectly impact on threatened species and threatened ecological communities (TEC). These impacts are summarised below.

**Direct impacts**

The Project Footprint totals 38.8 ha but has largely been cleared for existing infrastructure (15.8 ha).

Additionally, a large portion of the Project Footprint is located within already disturbed areas and road verges, comprised of non-remnant vegetation communities and habitat (approximately 17.5 ha). The remaining surveyed area of the Project Footprint is located within remnant vegetation, high-value regrowth and habitats and will impact (clear) approximately 5.5 ha.

Direct impacts to threatened species and ecological communities during construction are summarised below and described further in **Att A_Terrestrial Ecological Assessment MNES, Section 6.2, pages 46 – 48.**

***Threatened species habitat loss***

The Project Footprint includes a variety of habitats for a range of species including some listed under the EPBC Act as well as a diverse assemblage of common flora and fauna species.

The removal of habitat may displace native fauna into adjacent habitats and place some species at risk of direct Project-related impacts and potential mortality. The Project will slightly increase the fragmentation of wildlife corridors already created by Caloundra Road, Bells Creek Arterial Road and Kawana Way Link Road, and may further reduce the level of connectivity by making the existing barrier created by the roads wider.

The extent of impacts to flora and fauna species listed under the EPBC Act, either recorded or with a moderate likelihood of occurring within the Project Footprint, include:

**Flora**

***Mt Emu she-oak (Allocasuarina emuina)***

Mt Emu she-oak is listed as Endangered under the EPBC Act.

The species was recorded in the Project Footprint during the 2025 field survey, in an area of shrubby regrowth on the southern edge of Caloundra Road, 120 m east of Bell's Creek Arterial Road.

Within the current Project Footprint, there is the potential for a direct impact on 3.6 ha of non-remnant shrubland and 0.4 ha of RE 12.9-10.22 which are both habitats for this species (4.0 ha total).

***Acacia attenuata***

*Acacia attenuata* is listed as Vulnerable under the EPBC Act.

Suitable habitat for the species is present within the Project Footprint (corresponding to RE 12.9-10.4 and HVR 12.9-10.4).

Species have also been recorded within the Locality, with five WildNet records within 5 km.

Approximately 1.8 ha of habitat for the species is proposed to be impacted by the Project. However, 1.8 ha of potential habitat is of no substantial consequence to this vulnerable species given its wide distribution. *Acacia attenuata* can also occur in disturbed areas e.g. roadsides or edges of cleared/burnt land. A significant impact assessment was not required for this species.

***Southern Swamp Orchid (Phaius Australis)***

The Southern Swamp Orchid is Endangered under the EPBC Act.

There were no records of this species within 5 km and no individuals identified during field surveys. However, suitable habitat within the species range occurs in the Project Footprint (RE 12.3.5 and HVR 12.3.5).

Within the Project Footprint, approximately 3.3 ha of potential RE 12.3.5 and HVR 12.3.5 habitat for the species may be impacted. A significant impact assessment was completed for this species.

***Wallum Leek Orchid (Prasophyllum wallum)***

The Wallum Leek Orchid is Vulnerable under the EPBC Act.

There are records of this species within the Locality but no individuals were recorded during surveys.

There is 3.3 ha of potentially suitable Melaleuca swampland habitat within the Project Footprint for this vulnerable species. This impact to this amount of habitat is of no substantial consequence to the species. A significant impact assessment was not required for this species.

***Banished Stink Bush (Zieria exsul)***

The Banished Stink Bush is Critically Endangered under the EPBC Act.

Species have been recorded within the Locality, with 11 WildNet records within 5 km. Suitable habitat for the species is present within the Project Footprint (corresponding to REs 12.3.5, 12.9-10.4, and 12.9-10.22 as well as ecotonal areas), however no individuals were recorded during field surveys.

Approximately 5.5 ha of potentially suitable habitat for the species is proposed to be impacted by the Project. A significant impact assessment was completed for this species.

**Fauna**

***Koala (Phascolarctos cinereus)***

The Koala is listed as Endangered under the EPBC Act.

Species known to occur within the Locality, with the closest record less than 500 m east of the Project Footprint (ALA 2025). Suitable habitat for the species occurs within the Project Footprint, including access to permanent water bodies.

Within the current Project Footprint, there is the potential for a direct impact on 23 ha of potential habitat for the species: consisting of 5.7 ha of dispersal habitat and 17.3 ha of breeding and foraging habitat. A significant impact assessment was completed for this species.

***Wallum Sedge Frog (Litoria olongburensis)***

The Wallum Sedge From is listed as Vulnerable under the EPBC Act.

This species has been previously recorded within the Project Footprint as part of surveys completed in 2012 and 2022 for overlapping developments. However, the species was not recorded during ecological investigations, although it is acknowledged that surveys during the core season for this species have not completed.

Within the current Project Footprint, there is the potential for a direct impact on 3.3 ha of breeding and foraging habitat for the species. A significant impact assessment was completed for this species.

***Grey-headed Flying Fox (Pteropus poliocephalus)***

The Grey-headed Flying Fox is listed as Vulnerable under the EPBC Act.

Species known to occur within the Project Footprint, with records of roadkill from potential vehicle collision on Kawana Way recorded via desk study. Grey-headed Flying foxes were also recorded flying low and potentially foraging with the Project Footprint during surveys for Caloundra South Sewer Rising Main.

Seven camps are known to occur within 15 km of the Project Footprint, with the closest camp being under 4 km west of the Project Footprint.

Within the current Project Footprint, there is the potential for a direct impact on 16.6 ha of foraging habitat for the species. A significant impact assessment was completed for this species.

***Southern-eastern Glossy Black-cockatoo (Calyptorhynchus lathami lathami)***

The South-eastern Glossy Black-cockatoo is listed as Vulnerable under the EPBC Act.

Species known to occur within the Locality, with foraging signs for the species recorded within 200 m of the Project Footprint. This species was not identified during surveys, but pockets of foraging habitat are present within the Project Footprint where stands of Casuarina and Allocasuarina species occur within woodland. No large mature hollow bearing trees that may be suitable for breeding were identified during surveys.

Within the current Project Footprint, there is the potential for a direct impact on up to 13.1 ha of foraging habitat for the species, despite the lack of breeding habitat. A significant impact assessment was completed for this species.

**White-throated Needletail *(Hirundapus caudacutus)***

The White-throated Needletail is listed as Vulnerable under the EPBC Act.

Species known to occur within the Project Footprint, due to desk study records. The species however was not recorded during surveys. The species is almost exclusively aerial and unlikely to regularly utilise terrestrial habitat within the Project Footprint, which would be primarily used for aerial foraging while moving through the Project Footprint. The species flies most often over wooded areas, as well as pastures and farmland.

No direct impacts as result of habitat loss is therefore expected for this species. A significant impact assessment was not required for this species.

As this Project involves works relating to the upgrades of an existing road, no direct construction or operational risks are expected for this species.

Other potential direct impacts to threatened fauna species include:

- mortality or injury from vegetation clearing, construction activities or vehicle / machinery interactions
- impacts to wildlife corridors and connectivity.

**Threatened Ecological Communities**

Coastal Swamp Sclerophyll Forest TEC (Endangered under the EPBC Act) was field- verified within three separate patches within the Project Footprint comprised of RE/HVR 12.3.5 (*Melaleuca quinquenervia* open forest on coastal alluvium).

A total of 3.3 ha of Coastal Swamp Sclerophyll Forest TEC is present within the Project Footprint. A significant impact assessment was completed for this TEC.

**Indirect impacts**

Indirect impacts occur when Project-related activities affect vegetation or habitat in a manner other than a direct loss or clearing. Potential indirect impacts that may result from construction and/or operational phase of the Project to the threatened flora and fauna species. and TECs listed above include:

- Weed invasion and colonisation
- Dispersal of pest animals
- Reduced water quality
- Soil erosion and sedimentation
- Disruption of pollination cycle from dust generation
- Displacement of native fauna from noise and light generation.

These are discussed further in **Att A_Terrestrial Ecological Assessment MNES, Section 6.3, Pages 49 - 50**.

### 4.1.4.4 Do you consider this likely direct and/or indirect impact to be a Significant Impact? *

Yes

### 4.1.4.5 Describe why you consider this to be a Significant Impact. *

A Significant Impact Assessment (SIA) (refer **Att A_Terrestrial Ecological Assessment MNES, Appendix E**) was completed for the threatened flora and fauna species and ecological communities identified as recorded, or having a moderate or high likelihood of occurrence within the Project Footprint. The SIAs were undertaken using the precautionary principle and in accordance with the Commonwealth Significant Impact Guidelines 1.1 – MNES (Department of the Environment, Water, Heritage and the Arts, 2013).

**Significant impact likely**

Coastal Swamp Sclerophyll Forest TEC

The SIA concluded that the Proposed Action is likely to have a significant impact due to:

- Potential to reduce the extent of the ecological community.

Koala

The SIA concluded that the Proposed Action is likely to have a significant impact due to:

- Potential to reduce the area of occupancy of the species
- Potential to adversely affect habitat critical to the survival of the species.

Wallum Sedge Frog

The SIA concluded that the Proposed Action is likely to have a significant impact due to:

- Potential to adversely affect habitat critical to the survival of the species.

**Significant impact unlikely**

The SIA concluded that the Proposed Action is unlikely to have a significant impact on the remaining threatened flora and fauna species assessed.

### 4.1.4.7 Do you think your proposed action is a controlled action? *

Yes

### 4.1.4.8 Please elaborate why you think your proposed action is a controlled action. *

The Proposed Action has been assessed against the EPBC Act Significant Impact Guidelines 1.1, which identified that it is likely to have a significant impact on one TEC, and two threatened fauna species. As such, the Proposed Action is anticipated to be a controlled action. Further details are provided in section 4.1.4.5 of this referral

### 4.1.4.10 Please describe any avoidance or mitigation measures proposed for this action and attach any supporting documentation for these avoidance and mitigation measures. *

Detailed design of the Project has not yet commenced, with this assessment being completed using the concept design from the Business Case, with a buffer of 10 m applied to give an upper limit of potential impacts to MNES.

Through the detailed design, measures to avoid and minimise impacts to native vegetation/habitats as far as feasible will occur. Where impacts cannot be avoided or minimised, offset conditions will be imposed to compensate for residual impacts.

Design of the road is restricted by the existing placement of the roads, with widening works unable to avoid direct impacts to Coastal Swamp Sclerophyll Forest TEC, which was fragmented as part of the Bells Creek Arterial Road construction. Further loss of the Coastal Swamp Sclerophyll Forest TEC habitat cannot be avoided through the design. Two additional patches of the Coastal Swamp Sclerophyll Forest TEC are present north of Westaway Road which have been avoided by the Project Footprint .

A Project Environmental Management Plan (EMP) will be developed for the Project, which will be refined to include Project specific biodiversity mitigation measures during construction. TMR technical standards and specifications and attendant annexures (which identifies site specific details) will be implemented including MRTS04 General Earthworks, MRTS51 Environmental Management, MRTS52 Erosion and Sediment Control, and MRTS16 Landscape and Revegetation Works.

### 4.1.4.11 Please describe any proposed offsets and attach any supporting documentation relevant to these measures. *

Where required, TMR are committed to providing suitable offsets for activities that result in significant impacts to MNES.

## 4.1.5 Migratory Species

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

| Direct impact | Indirect impact | Species | Common name |
|---|---|---|---|
| No | No | Actitis hypoleucos | Common Sandpiper |
| No | No | Apus pacificus | Fork-tailed Swift |
| No | No | Calidris acuminata | Sharp-tailed Sandpiper |
| No | No | Calidris canutus | Red Knot, Knot |
| No | No | Calidris ferruginea | Curlew Sandpiper |
| No | No | Calidris melanotos | Pectoral Sandpiper |
| No | No | Charadrius leschenaultii | Greater Sand Plover, Large Sand Plover |
| No | No | Cuculus optatus | Oriental Cuckoo, Horsfield's Cuckoo |
| No | No | Gallinago hardwickii | Latham's Snipe, Japanese Snipe |
| No | No | Hirundapus caudacutus | White-throated Needletail |
| No | No | Limnodromus semipalmatus | Asian Dowitcher |
| No | No | Numenius madagascariensis | Eastern Curlew, Far Eastern Curlew |
| No | No | Pandion haliaetus | Osprey |
| No | No | Tringa nebularia | Common Greenshank, Greenshank |

### 4.1.5.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

### 4.1.5.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The following migratory species were identified as having a moderate or higher likelihood of occurrence within the Project Footprint.

**White-throated Needletail (*Hirundapus caudacutus*) – moderate likelihood**

*Direct impacts*

While the White-throated Needletail (migratory under the EPBC Act) has been previously recorded within the Project Footprint through desktop data, it was not observed during field surveys. The species is almost exclusively aerial and unlikely to regularly utilise terrestrial habitat within the Project Footprint, which would be primarily used for aerial foraging while moving through the Project Footprint. The species flies most often over wooded areas, as well as pastures and farmland.

As this Project involves works relating to the upgrades of an existing road, no direct construction or operational risks are expected for this species.

*Indirect impacts*

Indirect impacts occur when activities associated with the Proposed Action affect vegetation or habitat in a manner other than a direct loss or clearing. Since a large portion of the Project Footprint is located within already disturbed areas and road verges, indirect impacts that may impact on the species such as displacement from noise and light generation and dispersal of pest animals are already part of the disturbed landscape. As such, the Project is not anticipated to exacerbate these issues.

**Fork-tailed Swift (*Apus pacificus*) – moderate likelihood**

*Direct impacts*

While the Fork-tailed Swift has been previously recorded within the Project Footprint, it was not recorded during ecological investigations.

The Fork-tailed Swift is almost exclusively aerial, and the habitats impacted by the Proposed Action do not constitute ‘important habitat’ for the species.

Given the species is a non-breeding migrant to Australia, the widespread distribution of the species, and the generalist nature of their habitat preferences, the species is at low risk of potential Project-related impacts.

As such, no direct construction or operational risks are expected for this species as a result of the Project.

*Indirect impacts*

Since a large portion of the Project Footprint is located within already disturbed areas and road verges, indirect impacts that may impact on the species such as displacement from noise and light generation and dispersal of pest animals are already part of the disturbed landscape. As such, the Project is not anticipated to exacerbate these issues.

**Osprey (*Pandion haliaetus*) – moderate likelihood**

*Direct impacts*

While species has been previously recorded within 2 km of the Project Footprint, this highly mobile species is likely to only be recorded flying over the site. The species is unlikely to use terrestrial habitat within the Project Footprint for foraging or breeding and therefore is at low risk of potential direct project related impacts.

*Indirect impacts*

Since a large portion of the Project Footprint is located within already disturbed areas and road verges, indirect impacts that may impact on the species such as displacement from noise and light generation and dispersal of pest animals are already part of the disturbed landscape. As such, the Project is not anticipated to exacerbate these issues.

## 4.1.6 Nuclear

### 4.1.6.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

### 4.1.6.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action does not involve or include nuclear actions.

## 4.1.7 Commonwealth Marine Area

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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### 4.1.7.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

### 4.1.7.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action is not directly located within Commonwealth Marine Areas.

## 4.1.8 Great Barrier Reef

#### 4.1.8.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

#### 4.1.8.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The action is unlikely to have a direct or indirect impact as the Great Barrier Reef Marine Park is not located in the construction footprint or a 2km buffer. The Great Barrier Reef Marine Park is located approximately 280 km north of the Project.

### 4.1.9 Water resource in relation to large coal mining development or coal seam gas

#### 4.1.9.1 Is the proposed action likely to have any direct and/or indirect impact on this protected matter? *

No

#### 4.1.9.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action will not involve coal seam gas developments or large coal mining developments.

### 4.1.10 Commonwealth Land

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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#### 4.1.10.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

#### 4.1.10.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action will not be located on Commonwealth land.

### 4.1.11 Commonwealth Heritage Places Overseas

You have identified your proposed action will likely directly and/or indirectly impact the following protected matters.

A direct impact is a direct consequence of an action taken – for example, clearing of habitat for a threatened species or permanent shading on an ecological community as the result of installing solar panels.

An indirect impact is an 'indirect consequence' such as a downstream impact or a facilitated third-party action.

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#### 4.1.11.1 Is the proposed action likely to have any direct and/or indirect impact on any of these protected matters? *

No

#### 4.1.11.3 Briefly describe why your action is unlikely to have a direct and/or indirect impact. *

The Proposed Action is not located on a Commonwealth heritage place overseas.

### 4.1.12 Commonwealth or Commonwealth Agency

**4.1.12.1 Is the proposed action to be taken by the Commonwealth or a Commonwealth Agency? ***

No

# 4.2 Impact summary

## Conclusion on the likelihood of significant impacts

You have indicated that the proposed action will likely have a significant impact on the following Matters of National Environmental Significance:

- Threatened Species and Ecological Communities (S18)

## Conclusion on the likelihood of unlikely significant impacts

You have indicated that the proposed action will unlikely have a significant impact on the following Matters of National Environmental Significance:

- World Heritage (S12)
- National Heritage (S15B)
- Ramsar Wetland (S16)
- Migratory Species (S20)
- Nuclear (S21)
- Commonwealth Marine Area (S23)
- Great Barrier Reef (S24B)
- Water resource in relation to large coal mining development or coal seam gas (S24D)
- Commonwealth Land (S26)
- Commonwealth Heritage Places Overseas (S27B)
- Commonwealth or Commonwealth Agency (S28)

# 4.3 Alternatives

**4.3.1 Do you have any possible alternatives for your proposed action to be considered as part of your referral? ***

No

**4.3.8 Describe why alternatives for your proposed action were not possible. ***

TMR has reviewed options to improve safety and reduce congestion at the Caloundra Road, Kawana Way Link Road and Bells Creek Arterial Road intersection. Following a rigorous process to develop and evaluate potential design options for the intersection upgrade, one option was presented forward, performing best across all considered criteria. A summary of the design and assessment process is outlined below.

An options assessment was undertaken for the intersection upgrade which considered a total of 31 alternative solutions including non-infrastructure options, improving existing infrastructure options and new infrastructure options. A fatal flaw assessment was undertaken for each of the proposed solutions which assessed each option against an evaluation framework comprised of the following criteria:

- Addressing current and emerging network capacity and efficiency issues
- Addressing current and emerging safety issues
- Minimising environmental impacts in the Project Footprint
- Affordability (not a fatal flaw for ultimate option analysis).

The majority of traffic movements in the morning and evening are from Kawana Way Link Road (southbound) to Caloundra Road (westbound), with traffic eventually heading to the Bruce Highway. The priority for the Project was on improving north-south traffic movements over east-west movements. With this main objective, eight options were eliminated as they did not cater for the dominant north-south traffic movement and meet the future strategic network requirements.

Other considerations that ruled out design options included those that had the greatest intensity and area of impact to the natural environment. Impacts included:

- Clearing of regulated vegetation and protected plant area
- Location of wetland of high ecological significance within the proposed road corridor
- Hydrological flow and ponding changes with potential impacts to wetland area
- Impacts to core koala habitat.

The remaining 12 options were assessed through a qualitative and quantitative multi-criteria analysis (MCA) against the following evaluation criteria:

- Address current and emerging network capacity and efficiency issues
- Address current and emerging safety issues
- Minimise environmental impacts in Project Footprint
- Affordability
- Future lane use
- Impact on property owners
- Active transport – cyclists/ pedestrians
- Public transport.

The options were comparatively assessed against the Base Case (Option 0), the ‘Do Minimum’ option involving routine and periodic maintenance and rehabilitation activities. Scoring was done both equally and through a sensitivity analysis.

Three options were highlighted following the MCA, all of which included a north-south grade separated overpass, as described below:

- Signalised roundabout – upgrade of the existing roundabout to provide three through lanes on the east-west movement, and left turn slip lanes on each of the four approaches
- Grade separated right turn flyover – replaces the existing roundabout with two signalised intersections and a grade separated right turn movements from the north (to the west) and from the south (to the east)
- Diverging Diamond Interchange – replace the existing roundabout with Diverging Diamond interchange arrangement.

Following the Stage 1 MCA, the three options were evaluated based on Vissim modelling and underwent a Stage 2 MCA. The criteria for the Stage 2 MCA included:

- Construction cost
- Stage ability
- Traffic performance – average speed Traffic performance – level of service Road safety
- Active transport – cyclists and pedestrians Public transport efficiency
- Impact on property owners
- Flora and fauna.

A post-workshop review of the designs of the three options was undertaken to determine the potential for the following elements to be incorporated into existing options:

- Provide at-grade pedestrian crossings for the east-west movement
- Provide an east-west active transport grade-separated facility (circa 500m) to the north of the interchange
- Investigate removal of the southbound-westbound flyover due to cost, safety, design and constructability issues
- Changes to traffic signal arrangements to coordinate intersection with Pierce Avenue / Parklands Boulevard intersection.

Changes were made to the three options to accommodate the above considerations. An additional option was also developed (Narrow Diamond Interchange), which was comprised of the following:

- At-grade active transport crossings
- An east-west active transport grade-separated facility
- Southbound to westbound flyover was removed, enabling a reduction in the overall height of the interchange and addressing the safety, design and constructability issues raised during the workshop
- Traffic signal phasing arrangements were amended to include a phase which enables co-ordination with the Pierce Avenue / Parklands Boulevard intersection.

The Stage 2 MCA was re-run to include the addition of the Narrow Diamond Interchange Option. Based on the results of the updated MCA, the Narrow Diamond Interchange Option was adopted as the preferred ultimate option.

# 5. Lodgement

## 5.1 Attachments

1.2.1 Overview of the proposed action

| | Type | Name | Date | Sensitivity | Confidence |
|---|---|---|---|---|---|
| #1. | Document | Att A_Terrestrial Ecological Assessment MNES.pdf<br>Confirms the presence or likely absence of MNES listed under the EPBC Act, which have been identified by desktop/field assessments. It evaluates the significance of potential impacts upon the relevant MNES from the proposed action. | 06/11/2025 | No | High |

1.3.2.18 (Person proposing to take the action) If the person proposing to take the action is a corporation, provide details of the corporation's environmental policy and planning framework

| | Type | Name | Date | Sensitivity | Confidence |
|---|---|---|---|---|---|
| #1. | Document | Att_B_TMR_Environmental_Sustainability_Policy[1].pdf<br>The Environmental Sustainability Policy for the Department of Transport and Main Roads | 01/10/2021 | No | High |

3.1.3 Natural features, important or unique values that applies to the project area

| | Type | Name | Date | Sensitivity | Confidence |
|---|---|---|---|---|---|
| #1. | Document | Att A_Terrestrial Ecological Assessment MNES.pdf<br>Confirms the presence or likely absence of MNES listed under the EPBC Act, which have been identified by desktop/field assessments. It evaluates the significance of potential impacts upon the relevant MNES from the proposed action. | 06/11/2025 | No | High |
| #2. | Document | Att_C_ CKB_Road_intersection_upgrade_-_Biodiversity_Corridor[1].pdf<br>Shows where the State-mapped regional terrestrial biodiversity corridors are located with respect to the Project Footprint | 16/12/2025 | No | High |

3.2.1 Flora and fauna within the affected area

| | Type | Name | Date | Sensitivity | Confidence |
|---|---|---|---|---|---|
| #1. | Document | Att A_Terrestrial Ecological Assessment MNES.pdf<br>Confirms the presence or likely absence of MNES listed under the EPBC Act, which have been identified by | 06/11/2025 | No | High |

desktop/field assessments. It evaluates the significance of potential impacts upon the relevant MNES from the proposed action.

3.2.2 Vegetation within the project area

| | Type | Name | Date | Sensitivity | Confidence |
|---|---|---|---|---|---|
| #1. | Document | Att A_Terrestrial Ecological Assessment MNES.pdf<br>Confirms the presence or likely absence of MNES listed under the EPBC Act, which have been identified by desktop/field assessments. It evaluates the significance of potential impacts upon the relevant MNES from the proposed action. | 06/11/2025 | No | High |

4.1.4.2 (Threatened Species and Ecological Communities) Why your action has a direct and/or indirect impact on the identified protected matters

| | Type | Name | Date | Sensitivity | Confidence |
|---|---|---|---|---|---|
| #1. | Document | Att A_Terrestrial Ecological Assessment MNES.pdf<br>Confirms the presence or likely absence of MNES listed under the EPBC Act, which have been identified by desktop/field assessments. It evaluates the significance of potential impacts upon the relevant MNES from the proposed action. | 06/11/2025 | No | High |

4.1.4.5 (Threatened Species and Ecological Communities) Why you consider the direct and/or indirect impact to be a Significant Impact

| | Type | Name | Date | Sensitivity | Confidence |
|---|---|---|---|---|---|
| #1. | Document | Att A_Terrestrial Ecological Assessment MNES.pdf<br>Confirms the presence or likely absence of MNES listed under the EPBC Act, which have been identified by desktop/field assessments. It evaluates the significance of potential impacts upon the relevant MNES from the proposed action. | 06/11/2025 | No | High |

## 5.2 Declarations

## Completed Referring party's declaration

The Referring party is the person preparing the information in this referral.

| | |
|---|---|
| ABN/ACN | 80078004798 |
| Organisation name | WSP AUSTRALIA PTY LIMITED |
| Organisation address | 2000 NSW |
| Representative's name | Carolyn Creighton |
| Representative's job title | Environmental Scientist |
| Phone | +61 7 3721 4946 |
| Email | carolyn.creighton@wsp.com |
| Address | 900 Ann St, Fortitude Valley, QLD, 4006 |

☑ Check this box to indicate you have read the referral form. *

☑ Check this box to confirm these are the correct identification details. *

☑ By checking this box, I, **Carolyn Creighton of WSP AUSTRALIA PTY LIMITED**, declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. *

You may receive automated notifications that aim to assist you in tracking the progress of your project. You can opt out of these notifications by updating your communication preferences on your profile.

## Completed Person proposing to take the action's declaration

The Person proposing to take the action is the individual, business, government agency or trustee that will be responsible for the proposed action.

| | |
|---|---|
| ABN/ACN | 39407690291 |
| Organisation name | Department of Transport and Main Roads |
| Organisation address | 4000 QLD |
| Representative's name | David Wood |

| | |
|---|---|
| Representative's job title | Senior Environmental Officer |
| Phone | 07 4639 0730 |
| Email | david.m.wood@tmr.qld.gov.au |
| Address | c- PO Box 5505 Maroochydore BC4558 |

☑ Check this box to indicate you have read the referral form. *

☑ Check this box to confirm these are the correct identification details. *

☑ I, **David Wood of Department of Transport and Main Roads**, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity. *

You may receive automated notifications that aim to assist you in tracking the progress of your project. You can opt out of these notifications by updating your communication preferences on your profile.

## ✔ Completed Proposed designated proponent's declaration

The Proposed designated proponent is the individual or organisation proposed to be responsible for meeting the requirements of the EPBC Act during the assessment process, if the Minister decides that this project is a controlled action.

Same as Person proposing to take the action information.

☑ Check this box to indicate you have read the referral form. *

☑ Check this box to confirm these are the correct identification details. *

☑ I, **David Wood of Department of Transport and Main Roads**, the Proposed designated proponent, consent to the designation of myself as the Proposed designated proponent for the purposes of the action described in this EPBC Act Referral. *

You may receive automated notifications that aim to assist you in tracking the progress of your project. You can opt out of these notifications by updating your communication preferences on your profile.